

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of James Hugh McLaughlin) Group Art Unit
Serial No.: 09/964,143) 1617
Filed: September 25, 2001) Examiner
For: Emollient Skin Conditioning Cream and Method) Wang, Shengun

November 20, 2004

Commissioner of Patents and Trademarks
P. O. Box 1450
Alexandria, VA 22313-1450

Filing of The Brief on Appeal Under 37 CFR 1.192

Dear Sir:

Please find enclosed three (3) copies of Appellant's Brief on Appeal in the above-identified patent application together with the check in the amount of \$340.00 in payment of the fee for filing said Brief.

The filing of the brief is timely because the Notice of Appeal was filed on September 21, 2004, and time to respond to the Final Rejection herein was extended to November 23, 2004.

Appellant renews the request for a statement by U.S. Patent and Trademark Office of correct amount of fees payable in connection with Appellant's filing this appeal. The original request was made in Notice of Appeal herein and a copy is enclosed for your ready reference. The reply of some responsible person is requested again.

Respectfully submitted,

Richard N. Miller

Richard N. Miller
Reg. No. 22,977

Enc. Notice of Appeal

I hereby certify that this paper along with enclosed check and three copies of the enclosed Brief on Appeal are being deposited with the United States Post Office with sufficient postage as first class mail in an envelope addressed to the Commissioner Of Patent, P.O. Box 1450, Alexandria, VA. 22313-1450, on the ²² day of November, 2004, by Richard N. Miller.

Richard N. Miller

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of: James Hugh McLaughlin

Group Art Unit:
1617

Serial No.: 09/964,143

Filed: September 25, 2001

Examiner:
Wang, Shengun

For: Emollient Skin Conditioning Cream and Method

September 21, 2004

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

Notice of Appeal Under 37 C.F.R. 1.191

Dear Sir:

Applicant hereby appeals to the Board of Appeals from the final rejection dated March 23, 2004, by the Primary Examiner of Claims 3, 6, 7, 33, 37 and 39 – 43 in the above-identified application.

Further, Applicant respectfully requests that the members of the Board of Appeals in this matter be skilled in chemical arts.

A check is enclosed in the amount of \$1,280.00 in payment of the following fees:

| | |
|-----------------------------------------------|-----------------|
| Extension for response within the third month | \$950.00 |
| Notice of Appeal fee | <u>\$330.00</u> |
| Total | \$1,280.00 |

Because Applicant is uncertain as to ^{the} correct amount of the fee in connection with this appeal, the United States Patent and Trademark Office is respectfully requested to verify that the enclosed fee is correct. More particularly, the enclosed fee was calculated without taking into account the fact that Applicant paid a fee of \$110.00 for an Extension for response within the first month in

connection with Applicant's response herein dated July 21, 2004, entitled Amendment Under 37 C.F.R. 1.116 in the subject application. If appropriate, please refund any overpayment.

Respectfully submitted,

Richard N. Miller

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I hereby certify that this paper along with the enclosed check are being deposited with the United States Post Office with sufficient postage as first class mail in an envelope addressed to the Commissioner Of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 21st day of September, 2004, by Richard N. Miller. *Richard N. Miller*

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AP/1617
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of)
JAMES HUGH McLAUGHLIN) Group Art Unit 1617
Serial No. 09/964,143)
Filed: September 25, 2001) Examiner: Wang, Shengjun
For: EMOLLIENT SKIN CONDITIONING)
CREAM AND METHOD)

November 20, 2004

Hon. Commissioner of Patents and Trademarks

Washington, D.C. 20231

APPEAL BRIEF UNDER 37 CFR 1.192

(1) Real party in interest.

The real party in interest in this appeal is Crabtree & Evelyn, Ltd., the assignee of the invention claimed in the above-identified patent application.

(2) Related appeals and interferences.

No other appeals or interferences are known to Appellant or the Appellant's legal representative or the Appellant's assignee which will directly affect or be directly affected by or have a bearing on the Board of Appeal's decision in this appeal.

(3) Status of claims.

The status of all the claims, pending or cancelled or withdrawn, follows with the claims that are the subject of this appeal being identified:

Claims 1 and 2: (Cancelled)

Claim 3: (Pending and appealed)

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Claims 4 and 5: (Cancelled)

Claims 6 and 7: (Pending and appealed).

Claims 8 – 32: (Cancelled)

Claim 33: (Pending and appealed)

Claims 34 – 36: (Cancelled)

Claim 37: (Withdrawn)

Claim 38: (Cancelled)

Claims 39 - 43: (Pending and appealed)

In summary, Claims 3, 6, 7, 33 and 39 – 43 are pending and the subject of this appeal and Claim 37 is withdrawn as being drawn to a non-elected invention. Further, the full text of claims involved in this appeal is set forth in Appendix A herein.

(4) Status of amendments.

All amendments to the claims filed subsequent to the Final Rejection herein have been entered.

(5) Summary of the invention.

The invention in this appeal relates to a cosmetic exfoliating composition for cleansing and conditioning the skin of the human body in the form of a cream or extrudable paste. The text of the nine claims is set forth Appendix A of the Brief on Appeal with the text of generic claim 40 set forth below for the convenience of Board of Appeal.

Claim 40. A cosmetic exfoliating composition for use in cleansing and conditioning the skin of the hands, face, heels/knees/elbows and/or the body of a human being in the form of a extrudable paste or cream that comprises: (A) 40% to 60% by weight of emollient material consisting of a major proportion of emollient oil selected from the group consisting of animal oils, vegetable or plant derived oils, hydrocarbon oils, silicone oils and mixtures thereof and a minor proportion of an emollient hydrophobic compound selected from the group consisting of C12 –C18 fatty acids, C12 – C18 fatty

alcohols, C12 – C18 fatty esters, Shea butter, lanolin or a lanolin derivative, lecithin and mixtures thereof; (B) a water-soluble surface active agent selected from the group consisting of anionic, nonionic, amphoteric, zwitterionic and cationic surfactants in a proportion selected from the range of 0.4% to 8.0% by weight, said proportion being effective to deposit a skin softening amount of emollient material on the treated skin without a greasy after-feel when said composition is rinsed from skin with water and the skin is dried; (C) a calcium or magnesium salt of a C14 – C18 monocarboxylic acid wherein the weight ratio of emollient material to said monocarboxylic acid salt is in the range of 4:1 to 2.5:1, said proportion being adequate to produce a composition in the form of a stable, extrudable paste or cream; (D) 10% to 45% by weight of a non-irritating, mildly abrasive, skin compatible, particulate material that is effective to cleanse and lubricate the skin without abrading the skin, said particulate material including a mixture of 8% to 20% by weight of a starch material selected from the group consisting of starches and enzyme or acid hydrolyzed starches with another particulate material selected from the group consisting of sodium chloride, pumice, talc and vegetable flour; and (E) 0% to 10% by weight of water; said composition being effective to cleanse, soften, smooth and moisturize the skin when the composition is applied to and massaged into the skin, thereafter rinsed from the skin with tepid water and the skin is dried.

As described by generic Claim 40, the claimed invention relates to a preferred version of the exfoliating composition for cleansing and conditioning the skin of hands, face, heels/knees/elbows and/or the body of a human being described at page 4, line 26, to page 5, line 9, in the form of a cream or extrudable paste (page 5, line 4) comprising, by weight, 40% to 60% of an emollient material consisting of a major proportion of an emollient oil and a minor proportion of a hydrophobic compound selected from the group of C12 to C18 fatty acids, alcohols, esters and mixtures thereof (page 5, lines 27– 30); a water-soluble surface active agent selected from the group of anionic, nonionic, amphoteric, zwitterionic and cationic surfactants in a proportion in the range of 0.4% to 8% by weight sufficient to leave a thin film of emollient on the treated skin without a greasy after-feel upon rinsing said composition from the skin with tepid water and drying (page 4, line 28, to page 5, line 1); a magnesium or calcium salt of a C14 – C18 monocarboxylic acid (page 4, lines 17 – 18) in a weight ratio of emollient material to said monocarboxylic acid salt in the range of 4:1 to 2.5:1 that is adequate to produce an extrudable

paste or cream (page 4, lines 22 – 24); 10% to 45% of skin compatible particulate material (page 12, line 27) comprising a mixture of 8% to 20% of a starch material (page 12, line 30) with a particulate material selected from the group of sodium chloride, pumice, talc and vegetable seed flour (page 5, line 31 to page 6, line 1); and 0% to 10% of water (page 13, lines 6 – 8), said composition being effective to cleanse and lubricate the skin when it is applied to and massaged into the skin, thereafter rinsed from the skin with tepid water and the skin is dried (page 4, lines 12 – 16).

The significant characteristics of the claimed composition are:

- (1) the form, i.e., extrudable paste or cream (page 4, lines 22 – 23);
- (2) the composition, i.e., a mixture of: (a) emollient material consisting of major proportion of emollient oil and a minor proportion of hydrophobic fatty material; (b) a controlled proportion of surfactant selected from claimed range calculated to deposit a skin softening amount of fatty material on skin (page 4, line 28, to page 5, line 1); (c) 0% - 10% water (page 13, lines 6 – 8); (d) thickened with a calcium or magnesium fatty acid salt in a proportion correlated with the proportion of fatty material that is adequate to produce the desired paste or cream form (page 11, lines 10 – 14); and (e) containing a stable suspension of a particulate mixture of starch and a second particulate therein;
- (3) stability against separation in the temperature range of 4°C. to 50°C. (page 6, line 5);
- (4) the use, i.e., effective to cleanse, moisturize and soften skin without a greasy after-feel when the composition is applied to and massaged into the skin, rinsed off with water and the skin is dried due to use of a controlled amount of detergent (page 4, lines 6-9);

(5) additionally, being environmentally innocuous in use, particularly when the particulate mixture consists of starch and sodium chloride or vegetable seed flour or talc (page 12, lines 19 – 25, and page 5, line 31, to page 6, line 1);

Thus, the important characteristics of the claimed compositions are the paste or cream physical form of a skin exfoliating composition comprising a calcium or magnesium fatty acid thickened mixture of emollient correlated with proportion fatty material to produce a paste or cream form, surfactant in a proportion to deposit the desired film of fatty material on the skin, a specific particulate mixture and, optionally water that is effective to cleanse and moisturize the skin in use and is stable against separation in the temperature range of 4°C. to 50°C. and, optionally, is environmentally innocuous.

Further, the generic claim defines the important parameters in order to obtain said desirable skin cleansing and conditioning compositions; i.e., (a) controlled amount of a surfactant within the claimed range that leaves an emollient oil film in use without a greasy after-feel; (b) use of a magnesium or calcium C14 – C18 monocarboxylic acid salt in a proportion selected from claimed ratio range that is sufficient to thicken the emollient material and effective to produce a stable paste or cream; (c) use of the claimed proportion of particulate materials that includes 8% to 20% by weight of a starch material with another specific claimed particulate material and (d) 0% to 10% by weight a water.

Dependent claim 3 is directed to preferred compositions containing calcium stearate as the thickener (page 11, lines 6 – 7). Dependent claim 6 is directed to compositions containing the preferred anionic surfactant (page 10, lines 4 – 5) and claim 7 is directed to the particularly preferred anionic surfactant, i.e., sodium cocoyl N-methyl taurate (page 10, lines 5 – 6).

Dependent claim 33 is directed compositions containing the most preferred concentration, i.e., 15% to 41% by weight, of particulate matter (page 12, line 28) in combination with preferred anionic surfactant (page 10, lines 4 – 5). Dependent claim 39 claims the mixture of ingredients in the preferred composition of Example 1. Dependent claim 41 is directed to the preferred compositions for use on hands containing 0.4% to 3% by weight of surfactant (page 6, line 18) and wherein the particulate mixture contains sodium chloride (Example 1). Dependent claim 42 is directed the preferred compositions for use on heels/knees/elbows containing 2.0% to 8.0% by weight of surfactant (page 6, lines 20 – 22) and wherein the particulate mixture includes pumice (Example 2). Dependent claim 43 is directed the preferred compositions for use on the face and body containing 4.0% to 8.0% by weight of surfactant (page 6, lines 18 and 20).

The outstanding cleansing and conditioning performance of the claimed compositions is illustrated by results of reported evaluation by panel of women of the composition of Example 1 against women's favorite skin conditioning brand set forth at pages 17 and 18 of the specification. Surprisingly, the claimed compositions were preferred 100% of the time when compared to the user's favorite skin composition product.

(6) Issues

The issues follow:

- I. Are claims 3, 6, 33 and 40 – 43 unpatentable under 35 U.S.C. 103(a) as being obvious over Kellner in view of Barker et al.?
 - A. Would a person skilled in relevant art accept as true Kellner's teaching that "...sodium, ...magnesium, calcium salts of stearic acid..." are equivalents as

“Primary Carboxylated Salt Gelling Agents in Kellner’s cosmetic stick compositions?”

- B. Would a person skilled in relevant art question the credibility Kellner after noting that all of the 13 examples in Kellner contain significant proportions of butylene glycol, an ingredient not referred to elsewhere in the specification?
- II. Is claim 7 unpatentable under 35 U.S.C. 103(a) for being obvious over Kellner in further view of McAtee et al. (US 6,153,208)?
- III. Is claim 39 unpatentable under 35 U.S.C. 103(a) as being obvious over Kellner in further view of Touzan et al. (US 6,033,647)?

(7) Grouping of Claims

For each ground of rejection herein, the claims rejected as a group shall stand or fall together. Further, Appellant affirms that none of the nine (9) claims appealed hereunder are separately patentable from group that is rejected.

(8) Argument

I. Rejection Under 35 U.S.C. 103(a) As Obvious From Kellner In View of Barker

Claims 3, 6, 33 and 40 –43 are rejected “under 35 U.S.C. 103(a) as being unpatentable over Kellner in view of Barker et al.” The Examiner states that “Kellner teaches water and oil emulsion solid cosmetic compositions” that may include Appellant’s essential claimed emollient, surfactant, insoluble fatty acid salt, particulates and water ingredients in proportions within ranges disclosed by Kellner and concludes that “it would have been prima facie obvious to a person ordinary skill in the art” to make Appellant’s claimed compositions.

Appellant respectfully disagrees with the Examiner's rejection because the Examiner's rejection does not take into account the following differences between Appellant's claimed compositions and compositions described by Kellner reference and ramifications associated with differences:

- (1) Kellner compositions are in form of solid or stick (col. 1, lines 29 – 53, the 13 examples and claim 1) and Appellant's compositions are in form of cream or extrudable paste (page 11, line 17, and claim 40).
- (2) The Kellner compositions are oil-in-water or water-in-oil emulsions (col. 1, line 56, and claim 1) and Appellant's compositions are suspensions of particulates in emollient materials thickened with particles of calcium or magnesium C14 – C18 monocarboxylic acid salt (page 4, line 18, page 10, lines 29 – 31, and claim 40).
- (3) Kellner's compositions are used to deliver pigments to the skin (claim 1 and Appendix B) and, optionally, to moisturize the skin (col. 1, lines 40 – 41); whereas Appellant's compositions are effective to cleanse the skin (page 11, lines 16 – 24) and condition the skin by depositing fatty matter on the skin (page 6, lines 5 – 10).
- (4) Kellner's concentration of surfactant is controlled to facilitate wetting of pigments being delivered to the skin (claim 1 and col. 11, lines 65 – 66, and Appendix D); whereas, Appellant's surfactant concentration is controlled to deliver a controlled amount of emollient material to the skin (page 6, lines 10 – 22).
- (5) One object of Kellner is stick compositions which contain "appreciable amounts of water" (col. 1, lines 34 – 35 and 43-44) and the thirteen Kellner examples contain

37.7% - 50.4% by weight of water; whereas, Appellant's compositions contain 0% to 10% by weight water (page 13, lines 7 – 8).

Considering the differences between compositions of Kellner and Appellant's claimed compositions presented in points (1) – (5) above, Appellant concludes no person skilled in art of making cosmetic compositions would or could consider Appellant's claimed compositions to be obvious from reading the Kellner patent.

In order to clarify the record herein regarding the invention of Kellner, the Board of Appeal and the Examiner are referred Appendix B wherein pages 4 – 6 of Kellner's response to the first Office Action is set forth. More particularly, Kellner describes his inventive compositions in first paragraph on page 5 in distinguishing over primary Sabatelli reference (Sabatelli patent is set forth in Appendix E herein) as follows: **"pigmented compositions for delivering color to skin...contain, in addition to the carboxylated salt gelling agent, a mixture of an aqueous phase gelling agent and an oil phase gelling agent...contain (3) a mixture of pigment and powders."** One skilled in cosmetic art would be aware of these limitations on Kellner invention and would not agree with the Examiner's overly broad interpretation the Kellner disclosure to reject Appellant's non-analogous invention. Finally, page 6 describes the Declaration of David Kellner that led to allowance of the Kellner application as patent showing the improved stability at 50°C. of the Kellner compositions versus the prior art composition of Sabatelli. (Although test compositions are not shown, it is noted that sodium stearate was the primary gelling agent in test compositions of the Kellner Declaration.) Again, Appellant states that facts show that the Examiner's overly broad interpretation of Kellner

reference to reject Appellant's invention herein does not reflect the record herein and is at variance the interpretation of Kellner by one skilled in cosmetic art.

In addition, it is Appellant's position that the Kellner's statement that sodium stearate and calcium or magnesium stearate are equivalent "Primary Carboxylated Salt Gelling Agents" (col. 2, lines 25 – 63) would not be accepted as true by a person skilled in art of making cosmetic compositions for the following reasons:

- (a) Merriam Webster's Collegiate Dictionary, Eleventh Edition, defines equivalent as follows: "corresponding or virtually identical esp. in effect or function."
- (b) Because Kellner does not identify the medium that is gelled by said primary gelling agent, one skilled in art would have to look to the thirteen exemplified compositions and discover that all of compositions were oil-in-water emulsions wherein the continuous aqueous medium that contained, by weight, 38% – 50% water, 6% - 13% butylene glycol (a water soluble material) and 3% - 4% nonionic detergent (PEG-20 methyl glucose glycosesequiisostearate) was gelled with 6% - 8% by weight sodium stearate and 0.9% - 5% of PPC (an additional water-soluble gelling agent). The continuous aqueous medium comprised between 59% to 74.5% by weight of the thirteen exemplified compositions. (For record, Kellner's Example 1 contains 0.62% by weight of aluminum stearate as an additional water soluble gelling agent.)
Significantly, sodium stearate was primary gelling agent in all examples and no exemplified composition contained calcium or magnesium stearate as gelling agent.

- (c) According to Appendix B a person skilled in cosmetic art knows from The Condensed Chemical Dictionary, Ninth Edition, by Hawley that sodium stearate is soluble in water and a gelling agent (page 801) and magnesium stearate is water insoluble (page 532). Similarly, CRC Handbook of Chemistry and Physics, 81st Edition by Lide shows that calcium stearate is water insoluble at page 3-227. Further, the Affidavit Under 37 CFR 1.132 of James Hugh McLaughlin (the named inventor) of record confirms water solubility of sodium stearate and confirms water insolubility of calcium stearate.
- (d) According Appendix C herein containing pictures from Affidavit Two Under 37 CFR 1.132 of James Hugh McLaughlin of record herein, reproduction of Kellner's Examples 1 and 2B containing sodium stearate produced compositions in form of a solid stick and when calcium stearate replaced sodium stearate no composition in form of a solid stick was obtained.
- (e) U.S. 4,822,602 to Sabatelli (the primary reference against Kellner) set forth in Appendix E herein shows cosmetic sticks based on soap gels (sodium stearate) are old and discloses and claims a water and oil cosmetic stick in Example I containing sodium stearate. The equivalents of sodium stearate are set forth column 7, lines 32 – 37, and do not include calcium or magnesium stearate. If calcium or magnesium stearate is an art recognized equivalent of sodium stearate, why were they not listed in Sabatelli?

The obvious conclusion based upon points (a) – (e) discussed above for a person skilled in art of cosmetic compositions is that the teaching of Kellner that sodium stearate and calcium stearate and magnesium stearate are equivalents as gelling agents in water and oil

emulsion cometic compositions in form of solid stick is not true. Further, if Kellner's teaching that sodium stearate and calcium stearate/magnesium stearate are equivalent primary gelling agents is not true, the rejection herein cannot sustained because Kellner is sole reference that suggests the use calcium and magnesium stearate in cosmetic skin composition.

If the Examiner and/or The Board of Appeal still do not agree that calcium and magnesium stearate are not equivalents of sodium stearate as gelling agents in the Kellner compositions, Appellant requests each of Examiner and/or The Board of Appeal acknowledge for the record and for purposes further appeal (1) the water solubility of the foregoing stearates and (2) the identity of gelling agent for continuous water phase in Kellner Example 1 that comprises Kellner sequences 6 – 13 plus 0.62% by weight of aluminum stearate (total weight percentage of 67.18%) when calcium stearate is substituted for sodium stearate therein. (Please note that the oil phase of Kellner's Example 1 consists of, by weight, 12.44% dimethicone, 0.39% polyglyceryl 6-polyricinoleate, 3.51% cyclomethicone, 0.1% propyl paraben and 0.85% fragrances which is gelled with a mixture, by weight, of 1.50% synthetic wax, 5.7% isostearyl alcohol and 1.5% hydrogenated castor oil for a total 25.99% by weight of the oil phase of Kellner's Example 1. The pigments total 7.18% by weight and are suspended in oil in water emulsion.) For record, the aqueous phase gelling agents in the example are aluminum stearate, PPC and sodium or calcium stearate according to Kellner.

Furthermore, a person of ordinary skill in art reading Kellner would notice all of Examples of Kellner contain butylene glycol and seemingly would conclude that butylene glycol is essential ingredient in water and oil emulsion solid stick compositions of Kellner. However,

one skilled in art would find no other mention of butylene glycol in specification. This glaring omission reflects adversely on credibility of Kellner and on the credibility of U. S. Patent Office and the Examiners who allowed the Kellner application and Examiner herein for use of Kellner as a reference. For record, Appellant's exemplified compositions do not contain butylene glycol and said glycol is nowhere disclosed in Appellant's specification or claims.

In summary, if a person skilled in cosmetic art agrees with Appellant's position that sodium stearate, calcium stearate and magnesium stearate are not equivalents as gelling agents for gelling the continuous aqueous phase in Kellner's cosmetic composition in the form of solid sticks, there is no valid reason for that person to conclude that calcium stearate or magnesium stearate is useful in any cosmetic composition. On the other hand, if the person skilled in cosmetic art believes Kellner's teaching of equivalence of said stearates in the disclosed oil and water emulsion solid compositions for delivering pigments in the skin, that fact does not suggest to one skilled in cosmetic art that calcium or magnesium stearate be used to thicken skin compositions in the form of cream or extrudable paste containing 0% - 10% by weight of water. In conclusion, Appellant contends that Appellant's claimed compositions for cleansing and conditioning the skin in the form of an extrudable paste or cream containing a mixture of emollient material, a surfactant and particulates, including starch, all of foregoing thickened with calcium or magnesium stearate, are not obvious from Kellner's oil and water emulsion solid stick for delivering pigments to the skin..

The addition Barker to Kellner does overcome shortcomings of Kellner discussed above. Barker relates to a skin cleansing and wrinkle reducing cream (col. 1, line 53) that employs an oleaginous base having "distributed therein a plurality of water-soluble, skin abrading

granules... sodium chloride" (col. 1, lines 53 – 64). The Examiner relies Barker to show the use of sodium chloride in skin compositions. Barker is relevant because the disclosed skin composition is paste form and it contains two of Appellant's essential ingredients, i.e., fatty material and sodium chloride. Appellant made reference to Barker in specification (page 3, lines 20 – 23, and Example 16). More particularly, Appellant's Example 16 is reproduction of Barker's Example I with the stated result showing that Barker's composition was unstable because the sodium chloride precipitated in less than one hour (page 23, lines 11 – 15). Moreover, Barker alludes to the stability problem in column 3, lines 30 – 37, wherein his solution is to keep emollient material and salt separate and in use dipping the fingers into emollient and then into salt thereby forming the composition on the fingers. Therefore, Barker is relevant and further evidence that Appellant's stable cream compositions containing particulate sodium chloride are novel and unobvious. To extent Barker in combination Kellner suggests incorporation of sodium chloride in Kellner's oil and water emulsion compositions, it would render the sodium chloride particles ineffective because they dissolve in water and interfere with the gelling of the aqueous phase and formation of Kellner's solid stick.

II. Rejection of Claim 7 Under 35 U.S.C. 103(a) Over Kellner In Further View McAtee et al. (US 6,153,208)

McAtee et al. like Kellner relates non-analogous subject matter, i.e., a single use, disposable cleaning and conditioning article comprising a water insoluble paper layer (col. 12, line 30) joined to a second layer of woven or non-woven materials (col. 14, lines 44 – 55) impregnated with at least one surfactant and a conditioning material, e.g., an emollient material. Again, the common denominator is that McAtee's dry, impregnated pad and Kellner's water and

oil emulsion solid stick are applied to the skin, but neither reference is relevant to Appellant's skin composition in the form of a paste or cream that contains a suspension of particulate material to cleanse the skin and controlled proportions of emollient and surfactant designed to leave a film of emollient material on the skin after the composition has cleaned the skin and is rinsed therefrom. Again, Appellant maintains that inventive paste or cream composition is unlike the two layer cleaning pad of McAtee et al. or the oil in water emulsion pigmented solid stick of Kellner and a person of ordinary skill in the cosmetic art looking at Kellner and McAtee would not find Appellant's inventive paste or cream composition for cleansing and conditioning the skin to be obvious. Thus, the reference combination is not suggested by the references themselves, but is based 20/20 hindsight reconstruction of references by the Examiner in view Appellant's specification.

III. Rejection of Claim 39 under 35 U.S.C. 103(a) over Kellner In Further View of Touzan et al. (US 6,033,647)

Touzan, like McAtee et al., discloses non-analogous self foaming cream composition for treating the hair or skin comprising an oil in water emulsion gelled with an emulsifying polymer (col. 2, lines 29 – 55) that is pressurized with a propellant gas (col. 6, lines 44 – 54) and that is delivered in the form of a cream that foams when spread on the skin (col. 2, lines 61 – 65). The exemplified compositions contain 74 – 75% by weight of water and less than 2% by weight of surfactant and are unlike either Appellant's cream or paste containing 0 – 10% by weight of water or Kellner's exemplified oil and water emulsion solid stick compositions containing 37% - 50% by weight of water. Touzan is cited by the Examiner for its disclosure of the use of macademia oil in a composition that is applied to the skin. Again the reference combination of the Kellner oil

and water emulsion solid stick with Touzan's aerosol water and oil emulsion liquid is not suggested by references themselves and unlike Appellant's paste or cream mixture of emollient, surfactant and particulate mixture thickened with calcium and magnesium C14 – C18 fatty acid salt. Again, the reference combination is only based upon the Examiner's 20/20 hindsight reconstruction of the prior art in view of Appellant's invention, an invalid ground of rejection.

For the record, the decisions In re Wertheim, 541 F.2d 257, 191 USPQ 90, and In re Woodruff, 919 F.2d 1575, 16 USPQ 1934, are not applicable to facts presented in the instant application and the decision in Ex parte Winters, 11 USPQ2nd 1387, is rebutted by superior conditioning properties of claimed compositions set forth in Table I at page 18 of Appellant's specification versus the recognized competitive products currently in the marketplace. The decisions in In re Keller, 642 F.2nd 413, 231 USPQ 871 (CCPA) and In re Merck & Co., 800 F.2nd 1091, 231 USPQ 375 (Fed.Cir. 1986) are noted but not relevant to the rejection herein where as proved herein that the primary references teaches a person of ordinary skill in cosmetic art against the inclusion one of Appellant's essential ingredients, i.e., calcium and magnesium C14 – C18 acid salt and no other reference teaches the use of said ingredient in a relevant cosmetic composition. Finally, according to the express terms of 37 C.F.R. 1.132, an affidavit thereunder is proper to traverse a rejection based a cited reference.

In summary, the foregoing discussion proves that cited references to Barker et al., McAtee et al. and Touzan et al. do not remedy the shortcomings of the primary Kellner et al. reference set forth above, e.g., no credible disclosure of a insoluble calcium or magnesium C14 – C18 monocarboxylic acid salt as a thickening agent for a mixture of emollient material, surfactant and particulate mixture including starch in a composition in cream or extrudable paste form for

cleansing and conditioning the skin of the user. In fact the credible portion of the disclosure of Kellner et al. teaches one of ordinary skill in cosmetic art not to use a calcium or magnesium stearate in compositions of Kellner et al. for any purpose. Furthermore, even if one skilled in cosmetic art accepts all of the teachings of Kellner et al. as true, the oil and water emulsion solid stick compositions of Kellner for applying pigments to the skin of a user do not fairly suggest Appellant's composition in the form of a cream or extrudable paste comprising a mixture of emollient material, a controlled proportion of surfactant and particulate mixture, including starch, thickened by a calcium or magnesium C14 – C18 monocarboxylic acid salt for cleaning and conditioning the skin of the user. Further, the addition Barker et al. or McAtee et al. or Touzan et al. to Kellner et al. does remedy the shortcomings of Kellner et al. Thus, the rejection herein based upon Kellner et al. as primary reference is fatally defective because it does not disclose or suggest Appellant's claimed composition in accordance with 35 U.S.C. 103(a) and must be withdrawn. See *In re Berg*, 65 USPQ 2nd 2003 (Fed.Cir. 2003).

In conclusion, Appellant has invented a novel and useful skin cleansing and conditioning composition that is new, useful and unobvious from any fair combination of the references cited by the Examiner. Further, the claimed compositions in use are very effective according to the evaluation set forth in the Table at page 17 – 18 of the specification. Accordingly, the claimed are in accord with 35 U.S.C. 101 – 103 and allowance of claimed invention is respectfully solicited.

Respectfully submitted,



Richard N. Miller
Registration No. 22,977

Enc. Appendix A – Claims On Appeal

Appendix B – Pages 532 and 801 from The Condensed Chemical Dictionary, Ninth Edition
and 3-227 from CRC Handbook of Chemistry and Physics, 81st Edition

Appendix C – Exhibits A – D from Affidavit Two Under 37 CFR 1.132 of James Hugh
McLaughlin

Appendix D - Pages 4 – 6 of Amendment Under 37 CFR 1.111 mailed 11-9-99 In Kellner et
al.

Appendix E – US 4,822,602 (Sabatelli)

APPENDIX A

Claims on Appeal

Claim 3 A composition according to Claim 40 wherein said C14 – C18 monocarboxylic acid salt is calcium stearate.

Claim 6. A composition according to Claim 3 wherein the water-soluble surface active agent is an anionic surfactant.

Claim 7. A composition according to Claim 6 wherein said anionic surfactant is sodium cocoyl N-methyl taurate.

Claim 33. A composition according to Claim 3 wherein said particulate material is present in an amount of 15% to 41% by weight, and said water soluble surface active agent is an anionic surfactant.

Claim 39. A composition according to Claim 40 wherein the emollient oil is macadamia seed oil, the water-soluble surface active agent is sodium cocoyl N-methyl taurate, the water-insoluble monocarboxylic acid salt is calcium stearate and the particulate material is a mixture of starch and sodium chloride and the resultant composition is substantially anhydrous.

Claim 40. A cosmetic exfoliating composition for use in cleansing and conditioning the skin of the hands, face, heels/knees/elbows and/or the body of a human being in the form of a extrudable paste or cream that comprises: (A) 40% to 60% by weight of emollient material consisting of a major proportion of emollient oil selected from the group consisting of animal oils, vegetable or plant derived oils, hydrocarbon oils, silicone oils and mixtures thereof and a minor proportion of an emollient hydrophobic compound selected from the group consisting of C12 –C18 fatty acids, C12 – C18 fatty alcohols, C12 – C18 fatty esters, Shea butter, lanolin or a lanolin derivative, lecithin and mixtures thereof; (B) a water-soluble surface active agent selected from the group consisting of anionic, nonionic, amphoteric, zwitterionic and cationic surfactants in a

proportion selected from the range of 0.4% to 8.0% by weight, said proportion being effective to deposit a skin softening amount of emollient material on the treated skin without a greasy after-feel when said composition is rinsed from skin with water and the skin is dried; (C) a calcium or magnesium salt of a C14 – C18 monocarboxylic acid wherein the weight ratio of emollient material to said monocarboxylic acid salt is in the range of 4:1 to 2.5:1, said proportion being adequate to produce a composition in the form of a stable, extrudable paste or cream; (D) 10% to 45% by weight of a non-irritating, mildly abrasive, skin compatible, particulate material that is effective to cleanse and lubricate the skin without abrading the skin, said particulate material including a mixture of 8% to 20% by weight of a starch material selected from the group consisting of starches and enzyme or acid hydrolyzed starches with another particulate material selected from the group consisting of sodium chloride, pumice, talc and vegetable flour; and (E) 0% to 10% by weight of water; said composition being effective to cleanse, soften, smooth and moisturize the skin when the composition is applied to and massaged into the skin, thereafter rinsed from the skin with tepid water and the skin is dried.

Claim 41. A composition according to Claim 40 particularly suitable for use in cleansing and conditioning the hands of a human being wherein the proportion of the water-soluble surface active agent is 0.4% to 3.0% by weight and the particulate mixture includes sodium chloride.

Claim 42. A composition according to Claim 40 particularly suitable for use in cleansing and conditioning the heels/knees/elbows of a human being wherein the proportion of the water-soluble surface active agent is 2.0% to 8.0% by weight and the particulate mixture includes pumice.

Claim 43. A composition according to Claim 40 particularly suitable for use in cleansing and conditioning the face and body of a human being wherein the proportion of the water-soluble surface active agent is 4.0% to 8.0% by weight.

APPENDIX B

- A. The Condensed Chemical Dictionary, Ninth Edition, Title Page and Pages 532 and 801
- B. CRC Handbook Of Chemistry and Physics, 81st Edition, Pages 3-1 and 3-227

The Condensed Chemical Dictionary

NINTH EDITION

Revised by

GESSNER G. HAWLEY

*Coeditor, Encyclopedia of Chemistry
Coauthor, Glossary of Chemical Terms*

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VAN NOSTRAND REINHOLD COMPANY

NEW YORK

CINCINNATI
LONDON

ATLANTA
TORONTO

DALLAS

SAN FRANCISCO

MELBOURNE

varnishes, and paper (filler); animal and vegetable oils (bleaching agent); odor absorbent; filter medium; catalyst and catalyst carrier; anticaking agent in foods. See also asbestos.

magnesium silicofluoride. See magnesium fluosilicate.

magnesium stannate $\text{MgSnO}_3 \cdot 3\text{H}_2\text{O}$.

Properties: White crystalline powder. Soluble in water. Approximate temperature of decomposition 340°C .

Hazard: Toxic by inhalation. Tolerance, 2 mg per cubic meter of air.

Use: Additive in ceramic capacitors.

magnesium stearate $\text{Mg}(\text{C}_{18}\text{H}_{35}\text{O}_2)_2$, or with one H_2O . Technical grade contains small amounts of the oleate and 7% magnesium oxide MgO .

Properties: Soft white light powder; sp. gr. 1.028; m.p. 88.5°C (pure), 132°C (technical); tasteless; odorless. Insoluble in water and alcohol. Nontoxic. Nonflammable.

Grades: Technical; U.S.P.; F.C.C.

Containers: Fiber cans; multiwall paper sacks.

Uses: Dusting powder; lubricant in making tablets; drier in paints and varnishes; flattening agent; in medicines; stabilizer and lubricant for plastics; emulsifying agent in cosmetics; in foods as anticaking agent, binder, emulsifier.

magnesium sulfate (a) MgSO_4 ; (b) (epsom salts) $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$.

Properties: Colorless crystals; saline, bitter taste; neutral to litmus; sp. gr. (a) 2.65; (b) 1.678; (a) decomposes 1124°C ; (b) loses $6\text{H}_2\text{O}$ at 150°C ; $7\text{H}_2\text{O}$ at 200°C ; soluble in glycerol; very soluble in water; sparingly soluble in alcohol. Low toxicity. Noncombustible.

Derivation: (a, b) Action of sulfuric acid on magnesium oxide, hydroxide or carbonate; (b) mined in a high degree of purity.

Grades: Technical; C.P.; U.S.P.; F.C.C.

Uses: Fireproofing; textiles (warp-sizing and loading cotton goods, weighting silk, dyeing and calico printing); mineral waters; catalyst carrier; ceramics; fertilizers; paper (sizing); cosmetic lotions; dietary supplement; medicine (antidote).

magnesium sulfide MgS .

Properties: Red brown crystalline solid; sp. gr. 2.84; decomposes above 2000°C . Decomposes in water. Low toxicity.

Uses: Source of hydrogen sulfide; laboratory reagent.

magnesium sulfate $\text{MgSO}_4 \cdot 6\text{H}_2\text{O}$.

Properties: White, crystalline powder; slightly soluble in water; insoluble in alcohol. Sp. gr. 1.725; m.p., loses $6\text{H}_2\text{O}$ at 200°C ; b.p., decomposes. Low toxicity.

Derivation: Action of sulfurous acid on magnesium hydroxide.

Uses: Medicine; paper pulp.

magnesium tetrahydrogen phosphate. See magnesium phosphate, monobasic.

magnesium thiosulfate (magnesium hyposulfite) $\text{MgS}_2\text{O}_3 \cdot 6\text{H}_2\text{O}$.

Properties: Colorless crystals; soluble in water; insoluble in alcohol. Sp. gr. 1.818; loses $3\text{H}_2\text{O}$ at 170°C . Use: Medicine.

magnesium titanate Mg_2TiO_4 . Used in electronics.

magnesium trisilicate. U.S.P. specifies not less than 20% MgO and 45% SiO_2 ; similar to the F.C.C. requirements under magnesium silicate. See also talc.

Properties: Fine, white, odorless, tasteless powder; free from grittiness. Insoluble in water and alcohol; readily decomposed by mineral acids. Noncombustible.

Derivation: By reaction of soluble magnesium salts with soluble silicates.

Grades: Technical; U.S.P.

Uses: Industrial odor absorbent; decolorizing agent; antioxidant; medicine.

magnesium tungstate (magnesium wolframate) MgWO_4 .

Properties: White crystals; sp. gr. 5.66; soluble in acids; insoluble in water and alcohol. Low toxicity. Noncombustible.

Derivation: Interaction of solutions of magnesium sulfate and ammonium tungstate.

Uses: Fluorescent screens for x-rays; luminescent paint.

magnesium zirconate $\text{MgO} \cdot \text{ZrO}_2$.

Properties: Powder; sp. gr. 4.23; m.p. 2060°C .

Use: Electronics.

magnesium zirconium silicate MgZrSiO_4 , or $\text{MgO} \cdot \text{ZrO}_2 \cdot \text{SiO}_2$.

Properties: White solid; m.p. 1760°C ; density 80 lb/cu ft; insoluble in water; alkalies; slightly soluble in acids. Noncombustible.

Containers: 80-lb paper bags; 500-lb drums.

Uses: Electrical resistor ceramics; glaze opacifier.

"Magnesol."TM Trademark for a synthetic adsorptive magnesium silicate.

Uses: Solvent purification, clarification and recovery; oil refining; deodorizing and decolorizing of oils and fats.

magnetic separation. Removal of bits of iron and other tramp metal from a material as it passes to a screen or classifying device by means of a magnet placed close to the stream of particles.

magnetite (lodestone; iron ore, magnetic) Fe_3O_4 , often with titanium or magnesium. A component of taconite (q.v.).

Properties: Black mineral; black streak; submetallic, or dull to metallic luster. Contains 72.4% iron. Readily recognized by strong attraction by magnet. Soluble in powder form in hydrochloric acid. Decomposes at 1538°C to ferric oxide Fe_2O_3 . Sp. gr. 4.9-5.2; hardness 5.5-6.5. See also iron oxide, black.

magnetochemistry. A subdivision of chemistry concerned with the effect of magnetic fields on chemical compounds; analysis and measurement of these effects (e.g., magnetic moment and magnetic susceptibility) are important tools in crystallographic research and determination of molecular structures. Substances that are repelled by a magnetic field are diamagnetic (water, benzene); those that are attracted are paramagnetic (oxygen, transition element compounds). Diamagnetic materials have only induced magnetic moment; paramagnetic materials have permanent magnetic moment. Magnetochemistry has been useful in detection of free radicals, elucidation of molecular configurations of highly complex compounds, and in its application to catalytic and chemisorption phenomena. See also nuclear magnetic resonance.

magnetohydrodynamics (MHD). The behavior of high-temperature ionized gases passed through a magnetic field. A power-generating method using MHD involves an open cycle in which hot combustion gases

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cohols and Ve-
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ish.

trucks; carlots.

and detergents;
minating paper
bleaching and
e treatment; cool

solidification; glass foam; pigments; drilling fluids;
binder for foundry cores and molds; waterproofing
mortars and cements; impregnating wood.

sodium silicoaluminate. See sodium aluminosilicate.

sodium silicofluoride. See sodium fluorosilicate.

sodium silico-12-molybdate. See sodium 12-molybdo-
silicate.

sodium 12-silicotungstate. See sodium 12-tungstosili-
cate.

sodium silver chloride. See silver sodium chloride.

sodium silver thiosulfate. See silver sodium thiosul-
fate.

sodium alpha-sodioacetate. See alpha-sodiosodium ace-
tate.

sodium sorbate CH₃CH:CHCH:CHCOONa. Com-
bustible. Nontoxic.
Uses: Food preservative.

sodium stannate Na₂SnO₃ · 3H₂O, or Na₂Sn(OH)₆.
Properties: White to light tan crystals; soluble in
water; insoluble in alcohol; decomposes in air. Aque-
ous solution slightly alkaline. Loses 3H₂O at 140°C.
Derivation: (a) By fusion of metastannic acid and so-
dium hydroxide. (b) By boiling tin scrap and sodium
plumbate solution.

Hazard: Toxic. Tolerance, 2 mg per cubic meter of
air.

Uses: Mordant in dyeing; ceramics; glass; source of
tin for electroplating and immersion plating; textile
fireproofing; stabilizer for hydrogen peroxide; blue-
print paper; laboratory reagent.

sodium stearate NaOCC₁₇H₃₅.

Properties: White powder with fatty odor. Soluble in
hot water and hot alcohol; slowly soluble in cold
water and cold alcohol; insoluble in many organic
solvents.

Impurities: Varying quantities of sodium palmitate.

Grade: Technical.

Containers: 150-lb drums; 200-lb barrels.

Uses: Waterproofing and gelling agent; toothpaste
and cosmetics; stabilizer in plastics.

sodium stearoyl 2-lactylate.

Properties: White powder. Melting range 46-52°C.
Nontoxic.

Derivation: Sodium salt of reaction product of lactic
and stearic acids.

Uses: Emulsifier; dough conditioner; whipping agent
in baked products, desserts, and mixes; complexing
agent for starches and proteins.

sodium styrenesulfonate CH₂:CHC₆H₄SO₃Na. White,
free-flowing powder.

Use: Reactive monomer. See sodium polystyrenesul-
fonate.

sodium subsulfite. See sodium thiosulfate.

sodium succinate Na₂C₄H₄O₄ · 6H₂O.

Properties: White crystals or odorless granules; solu-
ble in water. Loses 6H₂O at 120°C.

Use: Medicine.

sodium sulfate, anhydrous Na₂SO₄. See also salt cake.
Properties: White crystals or powder; odorless; bitter
saline taste; sp. gr. 2.671; m.p. 888°C; soluble in
water and glycerol; insoluble in alcohol. Noncom-
bustible; nontoxic.

Derivation: (a) By-product of hydrochloric acid pro-
duction from salt and sulfuric acid. (b) Purification
of natural sodium sulfate from deposits or brines.
(c) By-product of phenol manufacture (caustic fusion
process); (d) Hargreaves process (q.v.).

Grades: Technical; C.P.; detergent; rayon; glass mak-
ers.

Containers: Bags; drums.

Uses: Manufacture of kraft paper, paperboard, and
glass; filler in synthetic detergents; sodium salts; ce-
ramic glazes; processing textile fibers; dyes; tanning;
glass; pharmaceuticals; freezing mixtures; laboratory
reagent; food additive.

sodium sulfate decahydrate (sodium sulfate, crystals;
Glauber's salt) Na₂SO₄ · 10H₂O.

Properties: Large transparent crystals, small needles,
or granular powder; sp. gr. 1.464 (crystals); m.p.
33°C (liquefies); loses water of hydration at 100°C.
Soluble in water and glycerin; insoluble in alcohol;
solutions neutral to litmus. Nontoxic; nonflammable.

Derivation: Crystallization of sodium sulfate from
water solutions. (Glauber's salt); also occurs in na-
ture as mirabilite (q.v.).

Grades: Technical; N.F.

Uses: See under anhydrous form.

sodium sulfhydrate. See sodium hydrosulfide.

sodium sulfide (a) Na₂S; (b) Na₂S · 9H₂O.

Properties: Yellow or brick red lumps or flakes or
deliquescent crystals; (a) sp. gr. 1.856 (14°C); m.p.
1180°C; (b) sp. gr. 1.427 (16°C); decomposes at
920°C. Soluble in water; slightly soluble in alcohol;
insoluble in ether; largely hydrolyzed to sodium acid
sulfide and sodium hydroxide.

Derivation: By heating sodium acid sulfate with salt
and coal to above 950°C, extraction with water, and
crystallization.

Grades: Flake; fused; chip sulfide (60% Na₂S). 60%
fused and broken; 30% crystals; liquid.

Containers: Barrels; drums; bulk.

Hazard: Flammable, dangerous fire risk. Strong irri-
tant to skin and tissue. Liberates toxic hydrogen
sulfide on contact with acids.

Uses: Organic chemicals; dyes (sulfur); intermediates;
rayon (denitrating); leather (depilatory); paper pulp;
solvent for gold in hydrometallurgy of gold ores;
sulfiding oxidized lead and copper ores preparatory
to flotation; sheep dips; photographic reagent; en-
graving and lithography; analytical reagent.

Shipping regulations: (Rail) Yellow label. (Air) Flam-
mable Solid label.

sodium sulfite (a) Na₂SO₃; (b) Na₂SO₃ · 7H₂O.

Properties: White crystals or powder; saline, sulfurous
taste. Soluble in water; sparingly soluble in alcohol.
Sp. gr.: (a) 2.633; (b) 1.5939. M.p.: (a) decomposes;
(b) loses 7H₂O at 150°C.

Derivation: (a) Sulfur dioxide is reacted with soda
ash and water, and a solution of the resulting so-
dium bisulfite is treated with additional soda ash;
(b) by-product of the caustic fusion process for
phenol.

Grades: Reagent; technical; F.C.C.

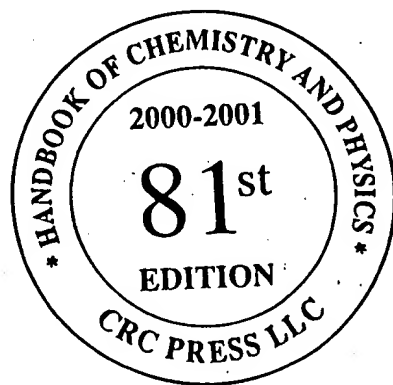
Containers: Bags; drums.

Hazard: Use prohibited in meats and other sources of
Vitamin B₁.

Uses: Paper industry (semichemical pulp); water
treatment; photographic developer; food preserva-
tive and antioxidant; textile bleaching (antichlor);
dietary supplements.

CRC Handbook of Chemistry and Physics

A Ready-Reference Book of Chemical and Physical Data



Editor-in-Chief

David R. Lide, Ph.D.

Former Director, Standard Reference Data
National Institute of Standards and Technology



CRC Press

Boca Raton London New York Washington, D.C.

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PHYSICAL CONSTANTS OF ORGANIC COMPOUNDS

The basic physical constants for over 12,000 organic compounds are presented in this table, along with structures and references to other sources of information. An effort has been made to include the compounds most frequently encountered in the laboratory, the workplace, and the environment. The selection was based mainly on the appearance of the compounds in various specialized tables in this *Handbook* and in other widely used reference sources, such as the *Merck Index* and the *DIPPR Database of Pure Compound Properties*. The occurrence of a compound on regulatory lists of hazardous chemicals was also taken into consideration, as was the availability of reliable physical constant data. Clearly, criteria of this type are somewhat subjective, and compounds considered important by some users have undoubtedly been omitted. Suggestions for additional compounds or other improvements are welcomed.

The data in the table have been taken from many sources, including both compilations and the primary literature. Where conflicts were found, the value deemed most reliable was chosen. Some of the useful compilations of physical property data are listed at the end of this introduction.

The table is arranged alphabetically by the primary name, which is generally the Index Name from the 8th or 9th Collective Index of Chemical Abstracts Service (CAS). In a few cases, especially pesticides and pharmaceuticals, the common name is used rather than the more complex systematic name. By convention, CAS Index Names are written in inverted order, e.g., chloromethane is listed as methane, chloro and ethyl acetate as acetic acid, ethyl ester. Furthermore, certain important compounds are listed under Index Names which differ from the names by which they are commonly known (e.g. aniline appears as benzenamine and acetone as 2-propanone). In order to facilitate the location of compounds in the table, three indexes are provided:

- **Synonym Index:** Includes common synonyms, but not the primary name by which the table is arranged.
- **Molecular Formula Index:** Lists compounds by molecular formula in the Hill order (see Preface to this *Handbook*).
- **CAS Registry Number Index:** Lists compounds by Chemical Abstracts Service Registry Number.

Two lines of data appear for each compound. The explanation of the data fields follows.

Top Line:

- **No.:** An identification number used in the indexes and to identify the structure diagrams.
- **Name:** Primary name, generally the CAS Index Name.
- **Mol. Form.:** The molecular formula written in the Hill convention.
- **CAS RN:** The Chemical Abstracts Service Registry Number assigned by CAS as a unique identifier for the compound.
- **Merck No.:** Monograph Number in *The Merck Index, Eleventh Edition*. It should be noted that this is not a unique identifier for a single compound, since several derivatives or isomers of a compound may be included in the same Monograph.
- **Bell. Ref.:** Citation to the *Beilstein Handbook of Organic Chemistry*. An entry of 5-18-11-01234, for example, indicates that the compound may be found in the 5th Series, Volume 18, Subvolume 11, page 1234.
- **Solubility:** Solubility in common solvents on a relative scale: 1 = insoluble; 2 = slightly soluble; 3 = soluble; 4 = very soluble; 5 = miscible; 6 = decomposes. See List of Abbreviations for the solvent abbreviations.

Bottom line:

- **Synonym:** A synonym in common use. When the primary name is non-systematic, the systematic name appears here.
- **Mol. Wt.:** Molecular weight (relative molar mass) as calculated with the 1991 IUPAC Standard Atomic Weights.
- **mp/°C:** Normal melting point in °C. Although some values are quoted to 0.1°C, uncertainties are typically several degrees Celsius. A value is sometimes followed by "dec", indicating decomposition is observed at the stated temperature (so that it is probably not a true melting point). See the List of Abbreviations for other abbreviations.
- **bp/°C:** Boiling point in °C. When available, the normal boiling point is given first, without a superscript. This is the temperature at which the liquid phase is in equilibrium with the vapor at a pressure of 760 mmHg (101.325 kPa). Boiling point values at reduced pressure are also given in many cases; here the superscript indicates the pressure in mmHg. A "dec" or "exp" following the value indicates decomposition or explosion has been observed at the boiling point. A simple entry of "exp" (sometimes followed by a temperature) indicates explosion may occur on heating, even below the boiling point. An entry of "sub" indicates that no boiling point is available, but measurable vapor (sublimation) pressure has been observed upon heating the solid. A temperature may be given, but no precise meaning can be attached because the pressure is not specified.
- **den/g cm⁻³:** density (mass per unit volume) in g/cm³. The superscript indicates the temperature in °C. Values are given only for the liquid and solid phases, and all values are true densities, not specific gravities. The number of decimal places gives a rough estimate of the accuracy of the value.
- **n_D:** Refractive index, at the temperature indicated by the superscript. Unless otherwise indicated, all values refer to a wavelength of 589 nm (sodium D line). Values are given only for liquids and solids.

Structures are given, when available, in the section following the main table, using the No. in the first column as the linking identifier.

PHYSICAL CONSTANTS OF ORGANIC COMPOUNDS (continued)

| No. | Name Synonym | Mol. Form. Mol. Wt. | CAS RN mp/°C | Merck No. bp/°C | Boil. Ref. d ₂₀ /g cm ³ | Solubility n _D |
|------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------|---------------------------------------|--------------------------------------------------|------------------------------------------------------------------|
| 8238 | Octadecanedioic acid, diethyl ester | C ₂₂ H ₄₂ O ₄ 370.57 | 1472-80-8 54.5 | 240 ¹² | 4-02-00-02176 | eth 4; EtOH 4 |
| 8239 | Octadecanedioic acid, 8,10-dihydroxy-, (R',R')-(±)- Phthalonic acid | C ₁₈ H ₃₄ O ₆ 348.48 | 23843-52-9 128 | 7297 | 4-03-00-01250 | |
| 8240 | Octadecane, 1-(ethenyl)- | C ₂₀ H ₄₀ O 288.54 | 830-02-9 30 | 182 ³ | 4-01-00-02057 0.8138 ⁴⁰ | chl 2 |
| 8241 | Octadecane, 3-ethyl-5-(2-ethylbutyl)- | C ₂₈ H ₅₈ 368.71 | 55282-12-7 | 229.5 ¹⁰ | 4-01-00-00586 0.8115 ²⁰ | 1.45239 ²⁰ |
| 8242 | Octadecane, 1-iodo- | C ₁₈ H ₃₇ I 380.40 | 629-93-8 34 | 383 | 4-01-00-00556 1.0984 ²⁰ | H ₂ O 1; EtOH 2; eth 2 1.4810 ²⁰ |
| 8243 | Octadecanenitrile | C ₁₈ H ₃₅ N 265.48 | 838-85-3 41 | 382 | 4-02-00-01242 0.8325 ²⁰ | H ₂ O 1; EtOH 3; eth 4; ace 4 1.3586 ⁴⁵ |
| 8244 | 1-Octadecanethiol Stearyl mercaptan | C ₁₈ H ₃₆ S 286.57 | 2885-00-9 30 | 204-10 ¹¹ | 4-01-00-01894 0.8475 ²⁰ | eth 4 1.4645 ²⁰ |
| 8245 | Octadecane, 8-p-tolyl- Toluene, p-(1-octyldecyl)- | C ₂₅ H ₄₄ 344.62 | 4445-08-3 | 185 ¹⁰ | 4-05-00-01221 0.8549 ²⁰ | 1.4811 ²⁰ |
| 8246 | 9,11,13-Octadecanetricarboxylic acid (Z,Z,Z) Eleostearic acid | C ₁₈ H ₃₀ O ₂ 278.44 | 3884-88-8 48.5 | | | |
| 8247 | Octadecanoic acid Stearic acid | C ₁₈ H ₃₆ O ₂ 284.48 | 57-11-4 68.8 | 8781 350 dec; 232 ¹⁵ | 4-02-00-01208 0.9408 ²⁰ | H ₂ O 1; EtOH 2; eth 4; ace 3 1.4296 ⁸⁰ |
| 8248 | Octadecanoic acid, aluminum salt | C ₅₄ H ₁₀₅ AlO ₉ 877.41 | 837-12-7 118 | 370 | 4-02-00-01206 | H ₂ O 1; EtOH 3; peth 3 |
| 8249 | Octadecanoic acid, anhydride | C ₃₆ H ₇₀ O ₃ 550.85 | 638-08-4 72 | | 4-02-00-01239 0.8385 ⁸² | H ₂ O 1; EtOH 1; eth 2; bz 2 1.4362 ⁸⁰ |
| 8250 | Octadecanoic acid, 18-bromo- Stearic acid, 18-bromo | C ₁₈ H ₃₅ BrO ₂ 363.38 | 2538-38-1 75.5 | 240 ⁴ | 2-02-00-00381 | bz 4; eth 4; EtOH 4 |
| 8251 | Octadecanoic acid, butyl ester Butyl stearate | C ₂₂ H ₄₄ O ₂ 340.59 | 123-95-5 27 | 1589 343 | 4-02-00-01218 0.8542 ²⁵ | H ₂ O 1; EtOH 3; ace 4 1.4326 ⁵⁰ |
| 8252 | Octadecanoic acid, calcium salt | C ₃₆ H ₇₀ CaO ₄ 607.03 | 1592-23-0 179.5 | 1710 | 4-02-00-01208 | H ₂ O 1; EtOH 1; eth 1 |
| 8253 | Octadecanoic acid, cyclohexyl ester Stearic acid, cyclohexyl ester | C ₂₄ H ₄₈ O ₂ 368.63 | 104-07-4 44 | | 4-08-00-00038 0.8891 ⁸ | eth 4 |
| 8254 | Octadecanoic acid, 8,10-dihydroxy-, 9,10-dihydroxytetraoleic acid | C ₁₈ H ₃₆ O ₄ 318.48 | 120-87-8 80 | 3171 | 4-03-00-01092 | H ₂ O 1; EtOH 2; eth 2 |
| 8255 | Octadecanoic acid, 2,3-dihydroxypropyl ester, (±)- | C ₂₁ H ₄₂ O ₄ 358.58 | 22810-83-5 74 | | 4-02-00-01225 | H ₂ O 1; EtOH 2; eth 2; lig 3 1.4400 ⁸⁸ |
| 8256 | Octadecanoic acid, 1,2-ethanediy ester | C ₃₈ H ₇₄ O ₄ 595.00 | 827-83-8 79 | 241 ²⁰ | 4-02-00-01223 0.8581 ⁷⁸ | H ₂ O 1; EtOH 1; eth 4; ace 4 |
| 8257 | Octadecanoic acid, ethyl ester | C ₂₀ H ₄₀ O ₂ 312.54 | 111-81-5 33 | 199 ¹⁰ | 4-02-00-01218 1.057 ²⁰ | H ₂ O 1; EtOH 3; eth 3; ace 4 1.4349 ⁴⁰ |
| 8258 | Octadecanoic acid, hexadecyl ester | C ₃₄ H ₆₈ O ₂ 508.91 | 1180-83-2 57 | | 4-02-00-01220 | ace 4; eth 4; chl 4 1.4410 ⁷⁰ |
| 8259 | Octadecanoic acid, 2-[2-(2-hydroxyethoxy)ethoxy]ethyl ester | C ₂₆ H ₅₂ O ₆ 480.70 | 108-07-0 40 | 328 | 1.1285 ¹⁹ | 1.4593 ²⁰ |
| 8260 | Octadecanoic acid, 2-hydroxyethyl ester | C ₂₀ H ₄₀ O ₃ 328.54 | 111-60-4 60.5 | 189-91 ³ | 4-02-00-01222 0.8780 ⁸⁰ | EtOH 2; eth 3 1.4310 ⁸⁰ |
| 8261 | Octadecanoic acid, lead (II) salt Lead stearate | C ₃₈ H ₇₀ PbO ₄ 774.15 | 7428-48-0 125 | | 4-02-00-01208 1.4 | H ₂ O 1; Hot EtOH 3; eth 1 |
| 8262 | Octadecanoic acid, 14-methyl- Stearic acid, 14-methyl | C ₁₉ H ₃₈ O ₂ 298.51 | 84434-84-7 37.5 | 182 ^{0.4} | 4-02-00-01285 0.9400 ²⁰ | |
| 8263 | Octadecanoic acid, 17-methyl- | C ₁₉ H ₃₈ O ₂ 298.51 | 2724-59-8 67.5 | 180 ^{0.3} | 4-02-00-01260 0.8420 ⁷⁰ | 1.4338 ⁷⁰ |
| 8264 | Octadecanoic acid, 9-methyl- Stearic acid, 9-methyl | C ₁₉ H ₃₈ O ₂ 298.51 | 88073-38-3 40 | 171 ^{0.1} | 4-02-00-01271 0.8980 ²⁰ | |
| 8265 | Octadecanoic acid, 3-methylbutyl ester Stearic acid, isopentyl ester | C ₂₃ H ₄₆ O ₂ 354.62 | 827-88-3 25.5 | 192 ² | 2-02-00-00353 0.855 ²⁰ | H ₂ O 1; EtOH 2; eth 3; ace 3 1.433 ⁵⁰ |
| 8266 | Octadecanoic acid, methyl ester | C ₁₉ H ₃₈ O ₂ 298.51 | 112-81-8 39.1 | 443; 215 ¹⁹ | 4-02-00-01216 0.8498 ⁴⁰ | eth 4; chl 4 1.4367 ⁴⁰ |
| 8267 | Octadecanoic acid, 1-methylethyl ester | C ₂₁ H ₄₂ O ₂ 326.58 | 112-10-7 28 | 207 ⁹ | 4-02-00-01219 0.8403 ³⁸ | ace 4; eth 4; EtOH 4; chl 4 |
| 8268 | Octadecanoic acid, 2-methylpropyl ester Isobutyl stearate | C ₂₃ H ₄₄ O ₂ 340.59 | 848-13-9 28.9 | 5034 223 ¹⁵ | 3-02-00-01017 0.8498 ²⁰ | eth 4 |
| 8269 | Octadecanoic acid, 12-oxo-, ethyl ester Stearic acid, 12-oxo, ethyl ester | C ₂₀ H ₃₈ O ₃ 328.52 | 88472-81-1 38 | 199 ³ | 3-03-00-01294 | EtOH 4 |
| 8270 | Octadecanoic acid, pentyl ester Stearic acid, pentyl ester | C ₂₃ H ₄₆ O ₂ 354.62 | 8382-13-4 30 | | 4-02-00-01220 | eth 4; EtOH 4 1.4342 ⁵⁰ |
| 8271 | Octadecanoic acid, phenyl ester Stearic acid, phenyl ester | C ₂₄ H ₄₀ O ₂ 360.58 | 837-55-8 30.58 | 287 ¹⁵ | 4-08-00-00818 | H ₂ O 1; EtOH 3; eth 3 |
| 8272 | Octadecanoic acid, 1,2,3-propanetriyl ester Tristearin | C ₅₇ H ₁₁₀ O ₈ 891.50 | 555-43-1 | 9669 | 4-02-00-01233 0.8559 ⁸⁰ | H ₂ O 1; EtOH 1; ace 3; bz 2 1.4395 ⁸⁰ |
| 8273 | Octadecanoic acid, propyl ester | C ₂₁ H ₄₂ O ₂ 326.58 | 3834-92-2 28.9 | 188.8 ² | 4-02-00-01219 0.8452 ³⁸ | ace 4; eth 4; EtOH 4 1.4400 ⁵⁰ |
| 8274 | Octadecanoic acid, 9,10,12,13-tetrabromo-, methyl ester Stearic acid, 9,10,12,13-tetrabromo, methyl ester | C ₁₈ H ₃₄ Br ₄ O ₂ 614.09 | 82080-88-8 83 | 215 ¹⁵ | 3-02-00-01049 | eth 4; EtOH 4; chl 4 1.4348 ⁴⁵ |

APPENDIX C

Exhibits A & D From Affidavit Two Under 37 CFR 1.132 of James Hugh
McLaughlin



Exhibit A

Kellner Example 1
(Gelling Agent, Sodium Stearate)

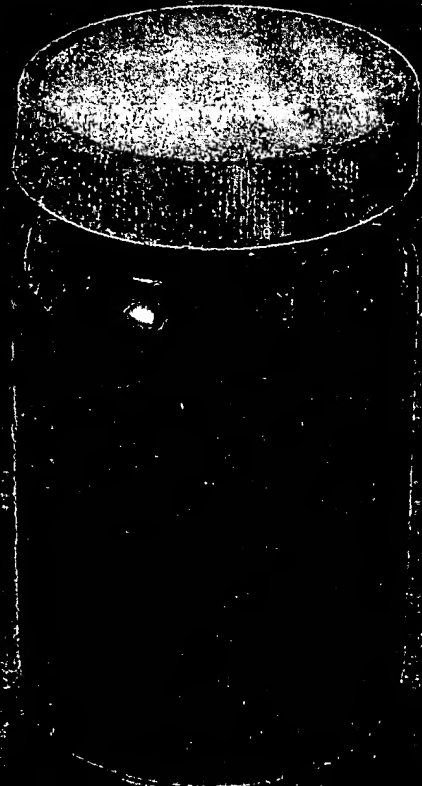
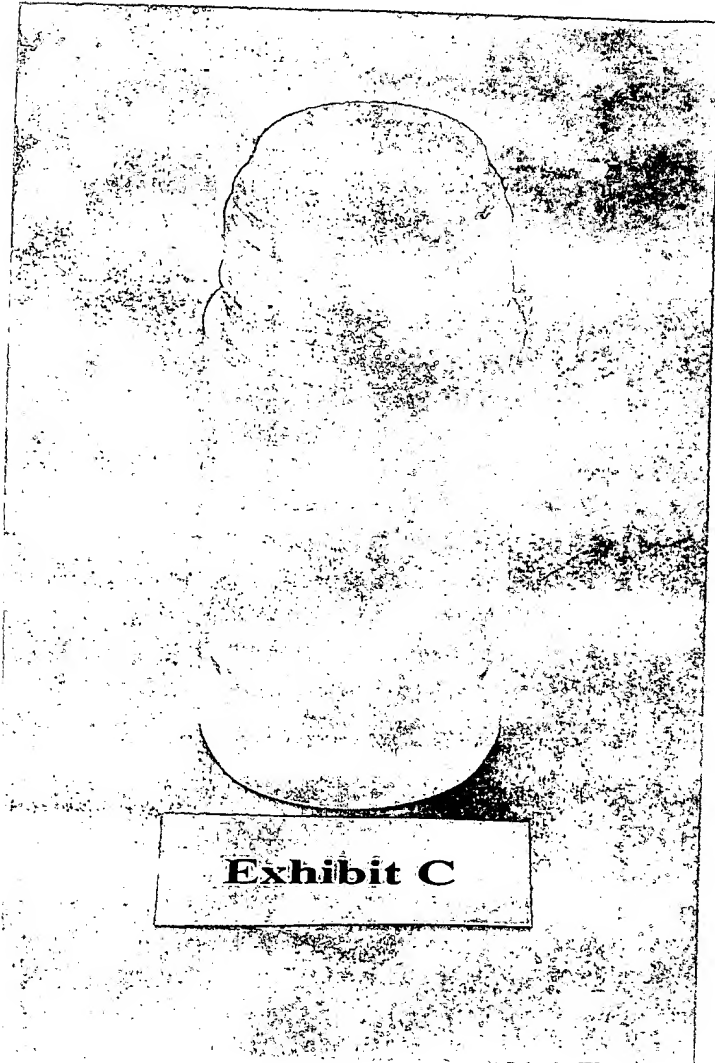


Exhibit B

Kellner Example 1 With
Calcium Stearate Substituted
For Sodium Stearate As the
Gelling Agent

APPENDIX C

Exhibits A - D From Affidavit Two Under 37 CFR 1.132 of James Hugh
McLaughlin



Kellner Example 2B
(Gelling Agent, Sodium Stearate)



Kellner Example 2B with
Calcium Stearate Substituted
For Sodium Stearate As The
Gelling Agent

APPENDIX D

Pages 4-6 of Amendment Under 37 CFR 1.111 Mailed 11-9-99 In Kellner et al.

well as a variety of other places throughout the specification. Further, the claims have been amended to clarify that the secondary gelling agent is a mixture of an oil phase gelling agent and an aqueous phase gelling agent rather than an ingredient selected from an oil phase gelling agent, an aqueous phase gelling agent, and mixtures thereof. Support for this change is found on page 4, lines 18-22 of the specification.

It is well established that references in combination will not make an invention obvious unless something in those references suggests some advantage to be derived from combining their teachings. It is Applicants position that while one might be able to arrive at the claimed invention by picking and choosing from Sabatelli and Tanaka, it is only with the benefit of hindsight that this reconstruction is made, since nothing in the references themselves suggests any advantage to be derived from combining their teachings.

Sabatelli teaches antiperspirant/deodorant emulsion sticks that contain water; a primary, carboxylated salt gelling agent (sodium stearate); cyclomethicone (emollient oil); and dimethicone copolyol (surfactant).

Tanaka teaches solid, pigmented cosmetic compositions containing pigments, water, a gelling agent which is agar or gelatin, oil, and surfactant. Tanaka's compositions are used to apply color to the skin, such as in foundation, eyeshadow, or lipstick.

The claimed compositions specify an oil in water solid pigmented cosmetic composition for applying color to skin containing 0.1-20% carboxylated salt gelling agent, 0.01-20% of a mixture of an aqueous phase gelling agent and an oil phase gelling agent, 0.1-30% emollient oil, 0.1-20% surfactant, 0.1-50% particulates comprising a mixture of pigments and powders; and 5-9% water.

Applicants' claimed compositions can be distinguished over Sabatelli in a number of important respects: (1) They are pigmented compositions for application of color to skin. Sabatelli's compositions are not for applying color to skin. (2) The claimed compositions contain, in addition to the carboxylated salt gelling agent, a mixture of an aqueous phase gelling agent and an oil phase gelling agent. Sabatelli's compositions do not appear to contain a secondary gelling agent that is a mixture of an aqueous phase and oil phase gelling agent. In addition, the claimed compositions contain (3) a mixture of pigments and powders. The Sabatelli sticks do not teach or suggest these limitations. This deficiency is not cured by Tanaka.

Applicants' claimed compositions can be distinguished over Tanaka because Tanaka's compositions (1) do not contain a carboxylated salt gelling agent, nor do they contain a secondary gelling agent that is a (2) mixture of an aqueous phase gelling agent and an oil phase gelling agent. Rather, the Tanaka compositions contain only one aqueous phase gelling agent.

There is nothing in Sabatelli that teaches that any advantage would be derived from including in the Sabatelli compositions a mixture of an aqueous phase and oil phase gelling agent in addition to the carboxylated salt gelling agent. Nor is there anything in this reference that would teach or suggest any advantage to be derived from including a mixture of pigments and powders in the antiperspirant/deodorant. While Tanaka teaches an aqueous phase gelling agent, there is nothing in the reference that teaches or suggests that any advantage would be derived from adding both a carboxylated salt gelling agent and an oil phase gelling agent to the Tanaka compositions.

Further, and most unexpectedly, it is only when pigmented solid makeup compositions containing a carboxylated salt gelling agent in addition to a mixture of an aqueous phase gelling

agent and oil phase gelling agent, that the resulting composition exhibits long term stability. In other words, pigmented solid makeup compositions containing only soap as a gelling agent will not exhibit long term stability. Nor will pigmented solid cosmetic compositions containing only an aqueous phase gelling agent exhibit long term stability. Long term stability means that a product is capable of maintaining stability at a temperatures of 50° C. for 2 to 4 weeks. "Maintaining stability" means that the product does not separate, liquify, or otherwise deteriorate after being exposed to a temperature of 50° C. for 2 to 4 weeks. Products that are unable to survive this type of stability testing are simply not commercially acceptable.

Applicants submit the Declaration of David Kellner which illustrates that the claimed compositions exhibit long term stability, e.g. are able to withstand temperatures of 50° C. for 4 weeks, while Tanaka's compositions, and compositions containing only soap as a gelling agent are not. Kellner prepared pigmented emulsion compositions containing only soap as the gelling agent, and illustrated that these compositions did not exhibit stability at 50° C. for 4 weeks. (These pigmented emulsion compositions are even closer to the claimed compositions than Sabatelli, because they include titanium dioxide particulates in addition to the soap and other ingredients, where Sabatelli does not teach pigments or powders in his antiperspirant sticks.) Kellner then prepared a composition from Tanaka, which contains only an aqueous phase gelling agent, and also showed that these compositions did not exhibit stability at 50° C. after 4 weeks. Kellner then prepared the Tanaka compositions and added soap, thus arriving at a composition that contain the soap based gelling agent, an aqueous phase gelling agent, and an oil phase gelling agent. These compositions were stable at 50° C. for 4 weeks. Thus, it is only when such pigmented emulsion

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